

I CLAIM:

1. In a trailer hitch apparatus for mounting on a towing vehicle to be coupled to a vehicle to be towed, a combination recessed storage and pivoting hook up receiver and ball mount assembly comprising:

a first frame member adapted to be mounted to the lower rear frame of a towing vehicle having upper and lower surfaces;

a bottom plate fixed to said frame member;

a top plate fixed to said frame member spaced apart from said bottom plate;

a hollow tubular hitch receiver member pivotally mounted between said bottom and top plates and having open front and rear ends;

said tubular hitch member being mounted so as to be pivotable through substantially one hundred eighty degrees from left side to right side of the towing vehicle;

a ball mount member having front and rear ends, telescopically mounted in said tubular hitch receiver member and having a body portion longer than the length of said receiver member and a hitch ball mounted on the rear end thereof;

said ball mount member and receiver member each having cooperating latching means for securing said ball mount member in a selected position in said receiver member;

towing index means and stowing index means mounted between said top and bottom plates; and

index receiving means formed on the front end of said ball mount member opposite said hitch ball end adapted to selectively cooperatively engage with said towing or stowing index means;

whereby in the unlatched condition said ball mount member may be rotated left to right and telescoped in and out of said receiver member to facilitate attaching to the vehicle to be towed and then secured either in towing or stowing condition by actuation of said ball mount and receiver members latching means.

2. The apparatus as claimed in claim 1 wherein said towing and stowing index means comprise a threaded bolt inserted vertically through said top and bottom plates; and

said stowing index means is positioned so that when said index receiving means on the front end of said ball mount member is engaged therewith said receiver and ball mount members are recessed under the rear end of the towing vehicle.

3. The apparatus as claimed in claim 2 wherein said cooperating latching means includes a linch pin inserted in aligned holes in said tubular hitch receiver and ball mount members respectively to lock them together.

4. The apparatus as claimed in claim 1 wherein said towing index means includes a pair of spaced apart sensor members mounted on said frame member; and

said sensor members are spaced apart sufficiently to receive there between the index receiving end of said ball mount member and allow a small amount of pivotal movement of said ball mount member.

5. The apparatus as claimed in claim 4 further including control means for receiving signals from said pair of sensor means when pivotal motion of said ball mount member activates at least one of said sensor means;

said control means also being connected to the brake means of the vehicle being towed; and

circuit means for actuating said towed vehicle brake means upon receiving a predetermined set of signals from said pair of sensors.

6. The apparatus as claimed in claim 5 further including switch members mounted in the inboard ends of said sensor means so as to be actuated alternately by left and right hand movement of said ball mount member.

7. The apparatus as claimed in claim 6 wherein said switch members are proximity switches actuated by the close approach of said ball mount member index receiving end.

8. The apparatus as claimed in claim 1 wherein said tubular hitch member with said ball mount member positioned therein pivots a total of one hundred fifty degrees from left to right to facilitate easy hitching up of a vehicle to be towed.

9 In a trailer hitch apparatus for mounting on a towing vehicle to be coupled to a vehicle to be towed, a combination recessed storage, telescoping, and pivoting hook up receiver and ball mount assembly, that may be selectively positioned in operating hitch-up, towing, or stowage condition by use of a single linch pin comprising:

a hollow tubular hitch receiver member pivotally mounted on the rear of a towing vehicle for left to right movement of substantially one hundred eighty degrees;

a ball mount member telescopically mounted in said tubular hitch receiver having a length greater than said hitch receiver and carrying on the rearward end thereof a hitch ball;

said ball mount member having on the forward end index receiving means ;

a set of holes formed in said hitch receiver and ball mount member so that when in alignment said receiver and ball mount assembly will engage towing index means or storage index means on the towing vehicle and be held in towing or storage condition.

10. The apparatus as claimed in claim 9 further including towing index means and stowing index means mounted on said towing vehicle adjacent said tubular hitch member;

said towing and stowing index means being configured to engage with said ball mount member index receiving means when said ball mount member is telescopically inserted into said tubular hitch receiver and said set of holes in said hitch receiver and ball mount members are in alignment

11. The apparatus as claimed in claim 10 further including a linch pin inserted in said set of aligned holes in said hitch receiver and ball mount members to maintain said members in towing or stowed condition.

12. The apparatus as claimed in claim 10 wherein said towing index means on the towing vehicle includes at least one sensor member able to sense pivotal movement of said ball mount member; and

control means connected to said sensor means for actuating the braking means of the towed vehicle upon a predetermined frequency of actuation of said sensor means.

13. The apparatus as claimed in claim 10 wherein said towing index means includes a pair of spaced apart sensor members mounted on said towing vehicle;

said sensor members being spaced apart sufficiently to receive there between the index receiving end of said ball mount member and allow a small amount of pivotal movement of said ball mount member; and

control means connected to said sensor means and adapted to be connected to the braking means of the towed vehicle so as to activate the towed vehicle braking means upon a predetermined frequency of actuation of said sensor means.